Jl. S. Afr. Bot. 47 (1): 2–6 (1981)

CHROMOSOME STUDIES IN THE SOUTHERN AFRICAN FLORA: 1–3.

D. J. Mogford
(Department of Plant Sciences, Rhodes University, Grahamstown)

1. **ENCEPHALARTOS LEHMANNII** Ecklon ex Lehm.

Chromosome Number: $2n = 18$ (Figs la, b).

Origin of Material: Seedling plants from the Grahamstown Botanical Garden. Rhodes University Herbarium accession *24833* (RUH).

Method of Preparation: Root tip material. Colchicine pretreatment, Feulgen/ Acetic orcein staining.

Observations

The chromosomes adhere to the general scheme for *Encephalartos* described by Marchant (1968), *viz.* four pairs of metacentric chromosomes and five pairs of submetacentrics, one pair of the latter possessing nucleolar organiser regions. The organiser regions are of a complex beaded appearance, and of a heterochromatic nature as revealed both by allocyclic condensation (Marchant, 1968) and differential fluorescence following denaturation-reannealing treatment (Mogford, 1978, and in press). The chromosomes are large, and the stretching of chromosome arms together with variation in the effectiveness of pretreatment makes accurate size determination difficult.

2. **ENCEPHALARTOS ALTENSTEINII** Lehm.

Chromosome Number: $2n = 18$ (Figs 2a, b).

Origin of Material: As in 1. Rhodes University Herbarium accession *24832* (RUH).

Method of Preparation: As in 1.

Observations: As in 1.

3. **ENCEPHALARTOS LONGIFOLIUS** (Jacq.) Lehm.

Chromosome Number: $2n = 18$ (Figs 3a, b).

Origin of Material: As in 1. Rhodes University Herbarium accession *24834* (RUH).

Method of Preparation: As in 1.

Observations: As in 1.

Accepted for publication 18th February, 1980.

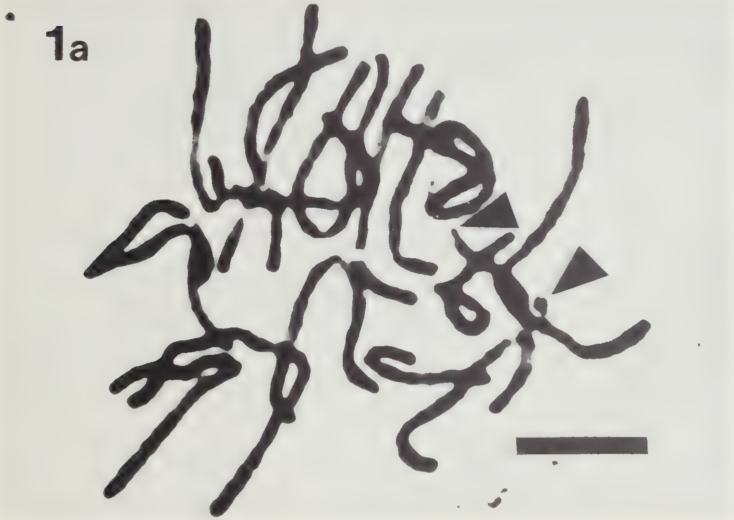

FIG. 1A.
E. lehmannii, somatic metaphase. Bar represents 10 μ. Arrows indicate satellites

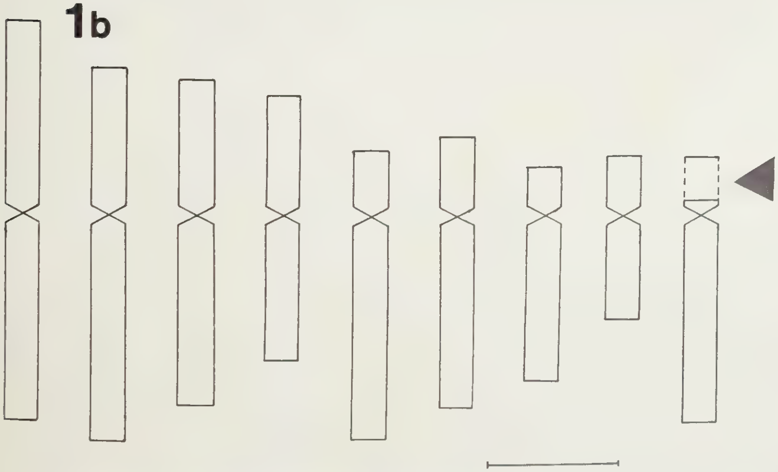

FIG. 1B.
E. lehmannii, haploid chromosome complement. Bar represents 10 μ. Arrow indicates nucleolar organiser region.

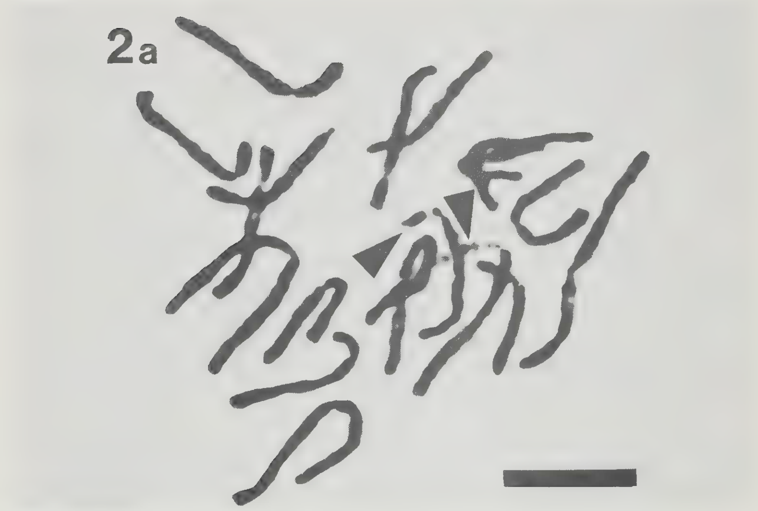

FIG. 2A.
E. altensteinii, somatic metaphase. Bar represents 10 μ. Arrows indicate satellites.

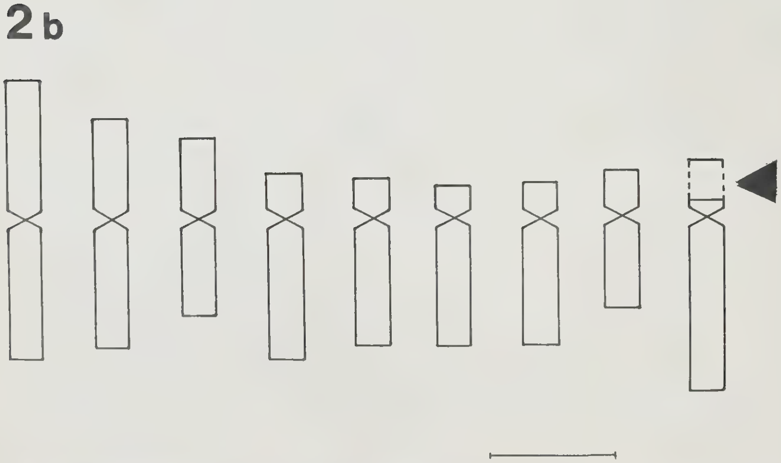

FIG. 2B.
E. altensteinii, haploid chromosome complement. Bar represents 10 μ. Arrow indicates nucleolar organiser region.

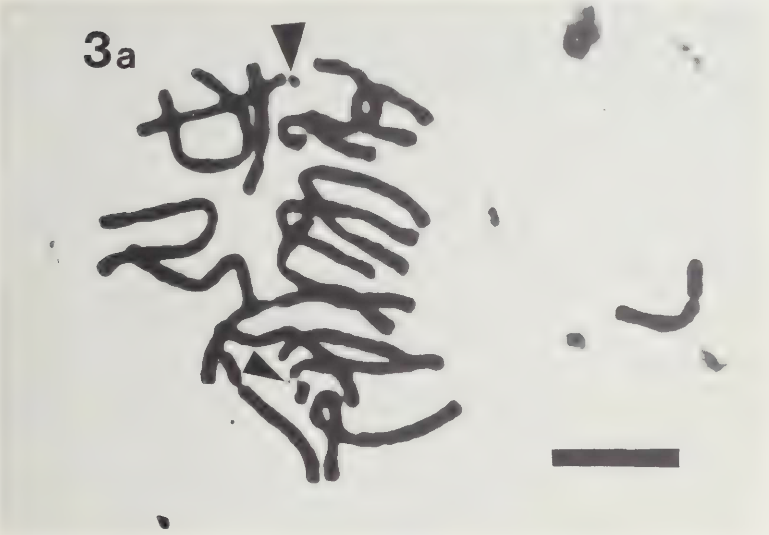

FIG. 3A.
E. longifolius, somatic metaphase. Bar represents 10 μ. Arrows indicate satellites.

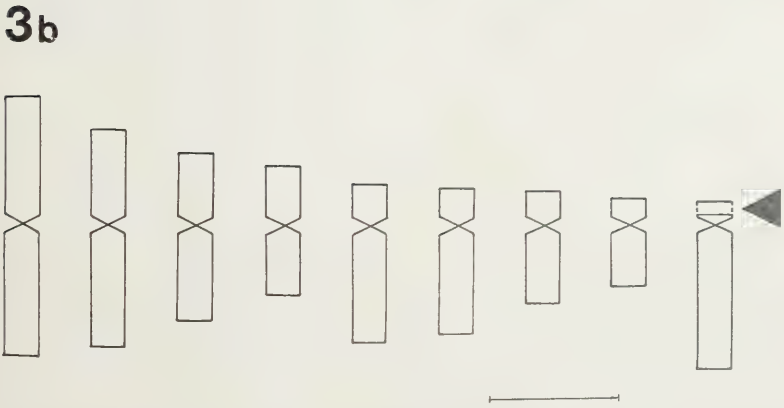

FIG. 3B.
E. longifolius, haploid chromosome complement. Bar represents 10 μ. Arrow indicates nucleolar organiser region.

REFERENCES

MARCHANT, D. W., 1968. Chromosome patterns and nuclear phenomena in the cycad families *Stangeriaceae* and *Zamiaceae*. *Chromosoma* **24**: 100–134.

MOGFORD, D. J., 1978. Nucleolar heterochromatin in *Encephalartos*. *Jl S. Afr. Bot.* **44**: 83–87.

MOGFORD, D. J., 1979. Heterochromatin in *Encephalartos*. *Cytologia* **44**: 951–954.